

from a common Normal distribution of treatment effects with an overall SSRI class effect mean, and between treatment within class heterogeneity. **RESULTS:** There were 55 eligible studies identified in the systematic review. The intervention with the greatest decrease in YBOCS was behavioural therapy ("exposure and response prevention") showing a decrease of 13.86 (CrI 9.34 to 18.31). The second and third greatest decrease was cognitive therapy (12.80 CrI 7.39 to 18.18) and behavioural therapy plus clomipramine (12.47 CrI 5.80 to 19.08) respectively. The SSRI class effect showed a relative decrease in mean YBOCS of 2.89 (CrI 1.05 to 4.71) compared to pharmacological placebo. The results of the individual SSRIs ranged from a decrease of 2.49 (sertraline) to 3.10 (fluvoxamine). **CONCLUSIONS:** This analysis showed a combination of behavioural therapy plus clomipramine has the greatest decrease in YBOCS. There is little evidence to show a difference between SSRIs.

PMH9

SYSTEMATIC REVIEW AND MIXED TREATMENT COMPARISON OF LITHIUM OR AN ATYPICAL ANTI-PSYCHOTIC (AAP) USED TO AUGMENT A SELECTIVE SEROTONIN REUPTAKE INHIBITOR (SSRI) IN TREATMENT RESISTANT DEPRESSION (TRD)

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OBJECTIVES: To estimate the clinical effectiveness of augmentation of SSRI antidepressant therapy with either lithium or an AAP in TRD, defined as failure to respond to two or more antidepressants in the current episode of depression. **METHODS:** Systematic review of CENTRAL, EMBASE, MEDLINE, and PsycINFO was completed in August 2011. Additional data were obtained from manufacturers. Studies were assessed for quality using the Cochrane Risk of Bias Tool. Pairwise meta-analysis and mixed treatment comparison (MTC) were undertaken based on intention-to-treat analyses. **RESULTS:** Of the 3,721 papers found in the literature search, 12 randomised controlled trials (RCTs) were identified; 10 (SSRI + AAP vs SSRI + placebo/no treatment); 1 (SSRI + AAP vs SSRI + lithium); 1 (SSRI + lithium vs SSRI + placebo). The RCTs included in the primary analyses used fluoxetine as the SSRI and olanzapine as the AAP. Results of the MTC showed a non-significant trend in favour of lithium augmentation for response [lithium odds ratio (OR) 1.29; 95% credible interval (95% CrI): 0.11 to 5.32], mean change in Montgomery-Åsberg Depression Rating Scale (MADRS) score from baseline (mean difference -1.47; 95% CrI: -9.10 to 6.41) and all-cause withdrawals (OR 0.74; 95% CrI: 0.10 to 2.66). **CONCLUSIONS:** In patients with TRD, there is a lack of direct evidence comparing the clinical effectiveness of augmenting an SSRI with an AAP compared with augmenting with lithium. Augmentation of SSRIs with lithium or AAP is likely to be beneficial in people with TRD. The limited evidence indicates no statistically significant difference between the two augmentation strategies.

PMH10

RELATIONSHIP OF INSIGHT WITH MEDICATION ADHERENCE AND THE IMPACT ON OUTCOMES IN PATIENTS WITH SCHIZOPHRENIA AND BIPOLAR DISORDER: RESULTS FROM A 1-YEAR EUROPEAN OUTPATIENT OBSERVATIONAL STUDY

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OBJECTIVES: Many patients with schizophrenia and bipolar disorder have impaired insight and low medication adherence. The aim of this post-hoc analysis is to explore the relationship between insight and medication adherence and their impact on the outcomes of patients with schizophrenia or bipolar disorder. **METHODS:** We included 903 patients with schizophrenia or bipolar disorder who participated in an observational study conducted in Europe on the outcomes of patients treated with two oral formulations of olanzapine over a 1-year period. Evaluations included Clinical Global Impression (CGI), Global Assessment of Functioning (GAF), insight (Scale to Assess Unawareness of Mental Disorder, SUMD), non-adherence (Medication Adherence Rating Scale, MARS), and therapeutic alliance (Working Alliance Inventory, WAI). Correlations between variables were assessed by Spearman Correlation Coefficient (SCC). A path analysis was used to understand the relationship between insight, adherence, therapeutic alliance and outcomes. **RESULTS:** 67.8% of patients had schizophrenia. GAF score was higher in bipolar vs schizophrenia patients (mean (SD) 58.4 (15.6) vs 51.9 (15.7), $p < 0.001$). Medication adherence was also higher in bipolar patients (mean MARS score (SD) 6.5 (2.8) vs 5.8 (2.7); $p < 0.001$). Patients with schizophrenia had lower insight (i.e. SUMD item 1, unawareness of mental disorder, mean (SD) of 2.5 (1.3) in schizophrenia vs 1.9 (1.2) in bipolar, $p < 0.001$). Better insight was associated with higher adherence (SCC, ranging from 0.39 to 0.49 for the three SUMD general items, $p < 0.0001$ in all cases) Higher insight was related to a stronger therapeutic alliance (SCC ranging from 0.38 to 0.48, $p < 0.0001$). The path analysis revealed a positive impact of insight on adherence and alliance and that stronger alliance was related to lower clinical severity (lower CGI score). **CONCLUSIONS:** Insight and adherence were found to be closely related. Insight impacts on the therapeutic alliance with mental health professionals. These factors are associated to treatment outcomes.

PMH11

SOCIAL CONTACTS REDUCE NEGATIVE SYMPTOMS, ESPECIALLY EMOTIONAL WITHDRAWAL IN PATIENTS WITH SCHIZOPHRENIA

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OBJECTIVES: In schizophrenia, negative symptoms - especially emotional withdrawal (EW) - represent an important dimension, and are associated to a significant burden. Social contacts are likely to reduce negative symptoms and ameliorate quality of life (QoL) over time. Our objective was to test whether this hypothesis was verified in a large cohort of European patients with schizophrenia. **METHODS:** We

used data from the EuroSC study, a longitudinal cohort of 1208 patients with schizophrenia followed for 2 years. Every 6 months, the collected information included QoL-Interview, from which the Global Satisfaction Score (GLS) and the frequency of social contacts score were derived, and the Positive And Negative Symptoms Scale (PANSS), from which EW score was derived. After bivariate and correlation analyses, we tested whether few social contacts at baseline would predict greater EW and lower GLS after 2 years when adjusted on baseline level. Finally, random-effects regression analyses were performed to test the longitudinal effect of social contact, adjusting on potential confounding factors. **RESULTS:** Bivariate and correlation analyses established a link between frequency of social contact and both EW score (-0.24, $p < 0.001$) and negative factor scale (-0.30, $p < 0.0001$) at each time point. Few social contacts at baseline were associated with greater EW ($p = 0.013$) and worse negative factor score ($p = 0.009$), when compared to baseline. A trend for prediction of better QoL was also found, although not reaching significance. Random effects regressions confirmed the significant impact of social contacts over time on EW ($p < 0.0001$), negative factor score ($p < 0.0001$) and QoL ($p < 0.001$). **CONCLUSIONS:** Given consistent effects of social contacts on reduction of negative symptoms and improvement of QoL in schizophrenic patients, social contacts should be used as a therapeutic tool. A higher frequency of social contacts could be obtained by regular therapeutic groups offered to these patients.

PMH12

OUTPATIENT TREATMENT OF ADOLESCENTS IN JAPAN WITH DRUGS FOR ATTENTION DEFICIT DISORDERS

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OBJECTIVES: To examine prescription patterns of drugs for the treatment of attention deficit disorders in Japanese children and adolescents. **METHODS:** We conducted a cross-sectional survey during October 2013 on outpatients aged 19 years or less in 34 private mental clinics. Patients who were prescribed at least one drug for the treatment of attention deficit disorders were analyzed in this report. Data were extracted on gender, age, principal psychiatric diagnosis (based on ICD-10), and types and doses of psychotropic drugs. **RESULTS:** The samples consisted of 286 males and 51 females. The average age (standard deviation) was 11.6 years (3.1). The mean length of psychiatric treatment was 21.3 months (24.0). The most frequent principal diagnostic category was "behavioral and emotional disorders with onset usually occurring in childhood and adolescence" (F9; $n = 237$), followed by "disorders of psychological development" (F8; $n = 99$), and "mental retardation" (F7; $n = 1$). Of 337 samples, 247 (73.2%) were prescribed OROS methylphenidate (OROS-MPH), a psycho-stimulant, while 141 (41.8%) received atomoxetine (ATMX), a selective noradrenalin reuptake inhibitor. OROS-MPH/ATMX combination therapy was administered to 51 (15.1%) of 337 patients. Antipsychotics were concurrently prescribed in 80 (23.7%) patients. Mood stabilizers were co-prescribed in 20 (5.9%) cases. Antidepressants were co-prescribed in 19 (5.6%) patients. Anxiolytics/hypnotics were concurrently prescribed in 13 (3.9%) patients. **CONCLUSIONS:** In Japan, nearly one-sixth of the outpatients with attention deficit disorders received OROS-MPH/ATMX combination therapy.

PMH13

THE QUALITY OF PRESCRIBING FOR PSYCHIATRIC PATIENTS

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OBJECTIVES: Prescribing for adult psychiatric patients is often highly complex due to the nature of psychiatric conditions, but also due to somatic comorbidity. Therefore, the aim of this study was to identify prevalence and types of potential inappropriate prescribing (PIP), assess the severity of potential clinical consequences and identify possible predictive factors of PIP. **METHODS:** The study was designed as a prospective study of PIP using medication reviews. Patients who were admitted during a 4 month period (August 2013 - November 2013) to a psychiatric university hospital were included ($n = 219$). The medication reviews, including an assessment of potential severity, were carried out by clinical pharmacologists after admission and after the attending physician had seen the patient. Frequencies and categories of PIP were analyzed in absolute numbers and as percentages. Severity of PIP was assessed using four categories. Logistic regression analysis was used to identify possible predictive factors of PIP. **RESULTS:** The proportion of patients with one or more PIPs was 123/219 (56%). "Interaction between drugs" was the most common category for potentially serious and potentially fatal PIPs with 49/123 (40%) and 32/45 (71%), respectively. Of 32 identified potentially fatal drug-drug interactions, 15/32 (47%) involved two or more antipsychotic drugs and 12/32 (37%) involved antipsychotic drugs in combination with antidepressants. The remaining 5/32 (16%) potentially fatal drug-drug interactions involved propranolol, erythromycin, simvastatin and promethazine. After adjusting for age, gender, alcohol/substance abuse, number of prescriptions, number of somatic diagnoses and level of kidney function, only polypharmacy (> 5 prescriptions) increased the odds for a PIP significantly; OR=4.82 (95%CI: 2.33-9.98), $p < 0.0001$. **CONCLUSIONS:** PIP is frequent and might have serious or fatal consequences. Special attention should be given to drug-drug interactions involving antipsychotics and antidepressants but also somatic medications and polypharmacy threatens medication safety. There is a pressing need to improve the quality in prescribing for psychiatric patients.

PMH14

THE PREVALENCE AND DISEASE BURDEN OF TREATMENT-RESISTANT DEPRESSION - A SYSTEMATIC REVIEW OF THE LITERATURE

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OBJECTIVES: Major depressive disorder affects approximately 10-15% of the population and is associated with significant morbidity and mortality. It is one of the leading causes of disability in young adults. A large proportion of the burden can be attributed to treatment-resistant depression (TRD). To understand the prevalence and disease burden of TRD in Western European countries, the US and Canada, a systematic literature search was performed. **METHODS:** OVID, the Cochrane Library and the CRD database were used to retrieve TRD publications in English language from January 2003-October 2013. In total, 6306 abstracts were identified. Predefined selection criteria regarding study design, patient population (age ≥ 12 years; US, Canada, Germany, Italy, France, Spain or UK; TRD defined as one treatment failure and high symptom severity e.g. MADRS ≥ 31 , or an inadequate response to ≥ 2 antidepressants) and outcomes of interest were applied. **RESULTS:** Only seven studies included prevalence and/or disease burden data. Five studies provided prevalence estimates which adhered to the strict TRD definition used for this review. Study design and definition of the patient population were critical in determining the prevalence rates, with the lowest rates found in US employer claims databases (11-15%), higher rates in commercial health insurance databases (29-31%) and the highest rates in a European multicenter study (51-56%). The database studies mainly included employed patients thereby likely underestimating the prevalence, whereas the European study likely overestimated the prevalence due to a less stringent TRD definition. Inconsistent data were reported regarding treatment outcomes, comorbidities, hospitalization and work productivity. There was no information on other outcomes such as health-related quality of life or functioning. **CONCLUSIONS:** No consistent data were found in the literature from January 2003-October 2013 regarding the epidemiology and disease burden of TRD. To determine the prevalence and disease burden for TRD, further studies are needed.

PMH15

PREVALENCE OF METABOLIC SYNDROME IN PATIENTS WITH SCHIZOPHRENIA ACCORDING TO THE PRESENCE OR ABSENCE OF NEGATIVE SYMPTOMS

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OBJECTIVES: The aim of this study was to estimate the prevalence of metabolic syndrome (MS) in patients with schizophrenia according to the presence or absence of negative symptoms. **METHODS:** A retrospective, cohort study was conducted using electronic medical records from the health provider BSA (Badalona, Spain). All adult outpatients with a diagnosis of schizophrenia were followed for 12 months. Two study groups were defined by the presence or absence of negative symptoms based on the PANSS Marder Negative Symptoms Factor (N1-N4, N6, G7 and G16). MS prevalence was estimated using the NCEP ATP III criteria. Descriptive statistics and logistic regression models were applied. **RESULTS:** We studied 1,120 patients (mean age: 46.8 \pm 13.8 years; male: 58.4%). One or more negative symptoms were present in 52.5% of patients (95%CI: 49.6-55.4%). Dyslipidemia (48.7%), hypertension (38.2%), and diabetes mellitus (19.3%) were the most frequent comorbid conditions. Quetiapine, risperidone and olanzapine were the most common antipsychotic drugs administered. Patients with negative symptoms showed a greater mean number of comorbid conditions than patients without this symptomatology (8.5 and 7.0, respectively; $p < 0.001$). Prevalence of MS was 38.6% (CI: 35.7-41.5%), higher among patients with one or more negative symptoms (43.9% vs. 34.9%, respectively; $p = 0.002$). MS was associated with the presence of negative symptoms, age, and comorbidity (OR=1.6, 1.2, and 1.2, respectively; $p < 0.05$). **CONCLUSIONS:** Further studies are necessary to elucidate the association between the presence of negative symptoms and MS among patients with schizophrenia as well as the underlying mechanisms involved.

MENTAL HEALTH – Cost Studies

PMH16

THE POTENTIAL BENEFITS OF LONG-ACTING ATYPICAL ANTIPSYCHOTIC THERAPY IN PREVENTING RELAPSE IN BRAZIL

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OBJECTIVES: To quantify the economic burden of schizophrenia relapse in Brazil, and to estimate the impact of atypical Long Acting Injectables (LAIs) on relapse. **METHODS:** Administrative health service data from a Brazilian public system database (DATASUS) were used to estimate the number of relapse patients and related resource utilisation. Corresponding data for private system patients were estimated based on published literature and by extrapolating DATASUS data. A prevalence-based costing with a mixed bottom-up and top-down approach was used to quantify direct and indirect costs, disability adjusted life years (DALYs) and their associated monetary value. A decision-analytic model was constructed to evaluate the cost effectiveness of potentially transferring non-compliant patients from oral antipsychotics to atypical LAIs. All costs are presented in 2013 Brazilian real. **RESULTS:** In 2011-12, 88,721 patients with schizophrenia in Brazil experienced 263,037 episodes of relapse that resulted in hospital or outpatient care. The potential avoidable health care cost of relapse was R\$722.6 million. The estimated additional health care cost per DALY avoided was R\$5,049 if non-compliant patients could be transferred to atypical LAIs to achieve 5% overall utilisation. Reducing relapses would give Brazil potential avoidance of 1,335 DALYs, which corresponds to a saving of R\$482.8 million in the stock of health capital. **CONCLUSIONS:** The economic burden of schizophrenia relapse in Brazil is significant. Brazilian policymakers should provide greater access to LAIs.

PMH17

ANALYSIS OF 'REVOLVING DOOR' PATIENTS IN OPIOID DEPENDENT PATIENTS: THE IMPACT OF TREATMENT DISCONTINUATION ON RELAPSE RATES AND HEALTH CARE COSTS IN US PUBLIC HEALTH INSURANCE CLAIMS

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OBJECTIVES: Buprenorphine/naloxone (BUP/NAL) combination is a well known treatment for opioid dependence. As a chronic relapsing disorder, some patients alternate between periods of on treatment and off treatment. The aim of this study was to compare health care resource utilization and costs between these patients and patients treated continuously. **METHODS:** Statistical analyses were conducted on a Medicaid insurance claims database (TruvenHealth MarketScan® Medicaid) from January 2007 to June 2012. Patients with at least two treatment episodes in the first year after the initial filled prescription were identified. The end of a treatment episode was defined as a period of 60 days with no filled BUP/NAL prescriptions following the theoretical end of the last filled prescription. An ordered logistic regression model was used to analyze the impact of initial treatment episode duration on the number of new episodes in the year following the end of the first episode. Health care resource utilization and related costs during the first year after initiation were compared between the two groups. **RESULTS:** 2,223 patients were included in the analysis. During the first year, 86% of patients had only one treatment episode, 13% had two and 1% had three. Compared to patients who remained in treatment continuously over 12 months, the multiple treatment episode group had lower medication costs (-\$2,877) but higher psychiatric inpatient costs (+\$720), non-psychiatric inpatient costs (+\$2001) and emergency room costs (+\$430) over 12 months. Total health care costs over 12 months were higher among multiple treatment episode patients (\$16,583 vs. \$15,123, $p = 0.0004$). **CONCLUSIONS:** Despite lower medication costs, total health care costs over 12 months were higher among patients with multiple treatment episodes compared to patients treated continuously.

PMH18

TREATMENT COST COMPARISON: PALIPERIDONE PALMITATE VERSUS RISPERIDONE LONG ACTING IN BRAZIL

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OBJECTIVES: To compare the treatment cost of paliperidone palmitate (PP) versus risperidone long acting (R-LA), both indicated for the treatment of schizophrenia in Brazil. **METHODS:** In Brazil, both (PP and R-LA) long acting 2nd generation antipsychotics are approved for the treatment of schizophrenia. Published literature shows no difference in safety and efficacy between them; therefore, a cost-minimization analysis was performed. Yearly treatment costs were calculated for an average dose of 37.5 mg per patient in the case of R-LA and 75 mg in the case of PP. The two initial treatment doses were considered: for PP, 150 mg on the 1st day and 100 mg on the 8th day, and for R-LA 21 days oral supplementation with 3 mg of risperidone, according to dosing intervals defined in the product label. Prices were gathered from the official price list (CMED – Apr'14). **RESULTS:** PP has the lowest cost of treatment, at R\$ 12,739 per patient in the 1st year – against R-LA R\$ 18,165 – and R\$ 11,359 in the 2nd year (R-LA has R\$ 17,971). Treatment with PP compared to R-LA may bring important savings to the payers (HMOs or Government), with potential to reduce the cost of treatment by 30% in the 1st year, and 37% in the 2nd year – allowing a higher number of patients to be treated at the same budget level. **CONCLUSIONS:** Although both molecules, PP and R-LA, have demonstrated similar efficacy, PP offers a cost reduction from the perspective of the Brazilian private health care system compared to R-LA. In addition, PP offers advantages that can have additional value for public and private payers alike such as a monthly injection and no need for cold chain. PP can therefore be considered a cost-saving therapeutic option for schizophrenia compared to R-LA.

PMH19

COSTS OF EMPLOYEES WITH TREATMENT-RESISTANT DEPRESSION BASED ON A CANADIAN PRIVATE CLAIMS DATABASE

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Approximately 10-20% of individuals with Major Depressive Disorder (MDD) fail to respond to antidepressant monotherapy. These individuals with treatment resistant depression (TRD) have been found to be frequent users of health care services, thus incurring significantly greater costs than those without TRD. **OBJECTIVES:** To investigate the cost of Treatment-Resistant Depression from a private payer perspective in Canada. **METHODS:** An employer-sponsored benefits plan database (2011/2012) was used to define a cohort of Non-TRD and TRD claimants. TRD claimants are defined as those on their third antidepressant monotherapy; or combination antidepressant therapy; or antidepressant augmented with lithium, thyroid hormone or an antipsychotic medication. The cost of prescription medication utilization, short-term disability (STD), and long-term disability (LTD) benefits for employees was calculated (2011 and 2012 \$CAN) for both Non-TRD and TRD groups. Descriptive statistics were used to characterize the cohort of claimants and employees, as well as resources and costs for employees. **RESULTS:** There were 55,324 and 61,028 employee claimants in 2011 and 2012, respectively. 717 (1.3%) and 798 (1.3%) were TRD claimants; 4,744 (8.6%) and 5,137 (8.4%) were Non-TRD claimants in 2011 and 2012, respectively. In 2011, the medication costs for treating depression was \$774 per TRD employee claimant compared to \$303 per Non-TRD claimant. STD costs were \$6,263 for TRD (n=79) and \$5,855 for Non-TRD (n=276). LTD costs were \$13,598 for TRD (n=80) and \$12,272 for Non-TRD (n=119). In 2012, the medication costs for treating depression per TRD employee claimant was \$794 compared to \$293 for Non-TRD claimants. STD costs were \$7,832 for TRD (n=86) and \$4,001 for Non-TRD (n=248). LTD costs were \$13,927 for TRD (n=89) and \$12,901 for Non-TRD (n=121). **CONCLUSIONS:** Claimants identified with TRD had higher medication, STD and LTD costs than those with Non-TRD. Limitations include lack of diagnostic information for claimants and small sample sizes for STD and LTD subgroups.